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REMARKS:

As the examiner can see, claim 1 has been amended so as to be directed to a method of triacylglyceride production comprising: increasing production of triacylglycerides in an organism by transforming the organism with an introduced DNA encoding a protein having glycerol-3-phosphate acyltransferase (GPAT) activity, the organism after transforming exhibiting enhanced production of triacylglycerides and said organism has higher triacylglyceride content compared to a control; and extracting oil from seeds from the organism.

Similarly, claim 17 has been amended to be directed to a method of triacylglyceride production comprising: transforming an organism with a vector, wherein the vector comprises a DNA encoding a protein comprising SEQ ID NO: 7, or a protein having the same function comprising a sequence having at least 70% homology with SEQ ID NO: 7, the organism after transforming exhibiting enhanced production of triacylglycerides and said organism has higher triacylglyceride content compared to a control; and extracting oil from seeds of the organism.

It is noted that support for 'the organism after transforming exhibiting enhanced production of triacylglycerides' may be found at least on page 3, lines 7-13 of the application as filed. Support for 'extracting oil' from seeds may be found at least on page 10, lines 10-15 of the application as filed.

As the examiner can see, the claim identifiers on claims 46 and 47 have been corrected.

Claims 1 and 17 were rejected under 35 USC 112 for containing the phrase 'growing the organism under conditions such that said glycerol-3-phosphate acyltransferase is expressed prior to harvesting' which was not supported by the specification as originally filed. As the examiner can see, this phrase has been deleted from claims 1 and 17.

Claims 1, 2 and 3 were rejected under 35 USC 103(a) as unpatentable over Nishizawa.

Claims 1-5, 12, 17 and 46-47 were rejected under 35 USC 103(a) as upatentable over Nishizawa in view of Davies and Bhella.

It is further noted that in the response to arguments, the examiner stated that the 'evidence for non-obviousness should be commensurate with the scope of the claims'.

As discussed with the examiner by telephone conference on October 11, 2006, claims 1 and 17 have been amended so as to distinguish applicant's invention from the cited references. Specifically, claims 1 and 17 have been amended to state that the organism after transforming has enhanced production of triacylglycerides and that oil is extracted from the seeds.

As discussed during the telephone conference, Nishizawa teaches 'the content of saturated molecular species in PG is calculated from the fatty acid content to be $36\pm 1\%$ for non-transformed plants and $26\pm 1\%$ for transgenic plants' (US Patent 5,516,667, column 14, lines 59-64). Thus, Nishizawa teaches that expression of a transgenic glycerol-3-phosphate acyltransferase in a transgenic plant results in a decrease in the content of saturated phosphatidylglycerol. Nishizawa teaches that this in turn made the plants more chilling resistant. However, Nishizawa states that 'no significant difference was observed between the control and the transgenic plants in the fatty acid compositions of major lipid classes other than PG' (US Patent 5,516,667, column 14, lines 65-67).

As such, Nishizawa teaches that expression of transgenic glycerol-3-phosphate acyltransferase will result in membranes containing less saturated phosphatidylglycerol which in turn will increase chilling tolerance. However, Nishizawa does not teach that introducing DNA encoding a protein having

glycerol-3-phosphate acyltransferase (GPAT) activity will result in enhanced production of triacylglycerides compared to a control and that oil can be extracted from seeds from the organism. As discussed above, Nishizawa states that 'no significant difference was observed between the control and the transgenic plants in the fatty acid compositions of major lipid classes other than PG' (US Patent 5,516,667, column 14, lines 65-67). As such, Nishizawa does not teach or suggest that triacylglyceride production could be enhanced by increasing GPAT activity as Nishizawa stated that no significant difference was observed between the control and the transgenic plants. As such, one skilled in the art would assume that expression of GPAT would improve chilling tolerance but based on Nishizawa's statement regarding no significant differences in fatty acid compositions other than PG would not assume or realize that triacylglyceride production could be increased using GPAT.

It is further noted that in examples 2 and 4 of US Patent 5,516,667, total lipids were extracted from tobacco leaves, not from seeds.

The examiner's repeated assistance with this application is greatly appreciated.

Further and more favorable consideration is respectfully requested.

Respectfully submitted

Ravinder K. Jain

PER: 

MICHAEL R. WILLIAMS

Registration No: 45,333

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Michael R. Williams Winnipeg, Manitoba, Canada

Telephone (204) 944-0034

FAX (204) 942-5723

CERTIFICATION OF FACSIMILE TRANSMISSION

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MICHAEL WILLIAMS

